INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

S-E-C-R-E-T

50X1-HUM

COUNTRY East Germany/USSR/Poland

REPORT

SUBJECT Telephotographic Device for Military Purposes

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SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

1. At the Zentrallaboratorium fuer Fernmeldetechnik (ZLF) (Central Laboratory for Telecommunication Affairs), special attention is given to the development of a telephotographic device for NVA. In late May 1959, a test drum with scanner was finished. The first complete test device is to be ready for operation in late 1959. The device will be equipped with transistors.

2. The optical system for this device, that is the light source, the lens and the mirror or prism, is being developed at the German Academy of Sciences. It has not yet been determined whether finally to use a mirror or prism for scanning purposes.

3. The telephotographic device is planned to be employed in the front lines. It is above all to transmit original DIN A 5 sketches by means of telephone lines. The development of a similar device for radio transmission is to follow.

4. The sketch to be transmitted is fixed to a drum and scanned by means of light beams. The device has approximately the following measurements: length 40 cm, width 20 cm, height 20 cm. The drum has a diameter of about 7 cm. The set is equipped with 3 keys, one for starting, one for transmitting, and one for receiving. For the first tests, a battery of 12 V and about 70 to 110 A/h was used.

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STATE	ARMY	NAVY	AIR	NSA	FBI	NSA
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5. In tests conducted at ZLF, it was found out that 4 scanning points pro mm guarantee a fair legibility. The light beam produced by the optical system falls on the sketch which then casts it on a photocell (selenium cell). The drum is advanced by a spindle, the rate of advance (Vorschub) is 0.23 mm. The photocell modulates a carrier frequency of 1,500 c.* This carrier frequency and both sidebands are transmitted by telephone lines, whereby the telephotographic device and the telephones are connected in parallel. During the transmission of the sketch, telephone traffic is suspended.

6. Tests with another unidentified light-sensitive cell are being carried out at the German Academy of Sciences. These tests are to find out which cell has the most favorable spectral sensitivity.

7. Two rates of revolutions are planned for the drum, 60 revolutions per minute and 120 revolutions per minute, at 120 revolutions per minute, the transmission time for the DIN A 5 sketch is about 5 minutes. The speed of 60 revolutions per minute is planned to be used for bad transmission lines and for long-distance transmission.

8. At the speed of 120 revolutions per minute, a mechanical vibration is produced, which is due to the relatively long drum spindle and its small diameter. This vibration is detrimental to the quality of the transmitted sketch. An electrometer of greater than normal dimensions with a relatively high retarding torque is therefore employed.

9. In Warsaw, a similar telephotographic device is being developed for the Polish Army. Its first model was allegedly put into test operation in February 1959. It is not known, where and by whom this device was developed.

10. A comparable telephotographic device is allegedly available in the USSR. It is said to be equipped with tubes and therefore to have larger dimensions.

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11. It was approximately in February 1958, that ZLF received two telephotographic devices [redacted] which presumably came from the Soviet Union. Both devices were tested and disassembled. One of the devices is equipped with a drum for sketches of a size up to DIN A 4; the other one has an endless tape for a chemical recording procedure.

* Note: Hertz.

Attachment:

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[redacted] sketch of the telephotographic facsimile device with a legend explaining the various parts depicted.

[redacted]

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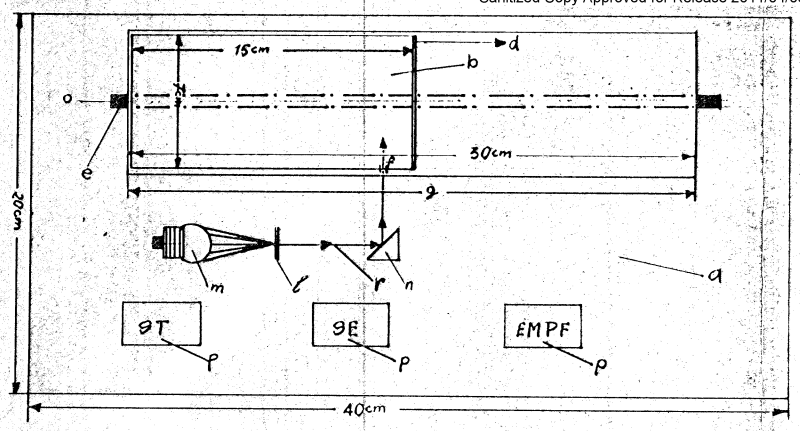
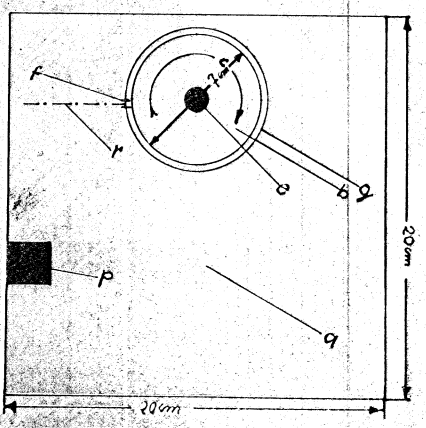


MASSTAB 1:2

Legende zur Skizze (Faksimilegerät) :

a) Gehäuse, etwa 40 x 20 x 20 cm.
b) Trommel
c) Drehrichtung der Trommel
d) Trommelschub = 0,25 mm je Umdrehung
e) Trommelachse
f) Öffnung in Trommelumwandung für Lichtstrahl
g) Trommelumwandungsgehäuse mit 1-2 mm Abstand von der Trommel.
l) Linse
m) Lichtquelle = elt. Birne
n) Spiegel oder Prisma
r) Lichtstrahl
o) Elektromotor und Spindel zum Antrieb der Trommel.
p) Bedienungstasten :
ST = Start
SE = Sendung
Empf = Empfang



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